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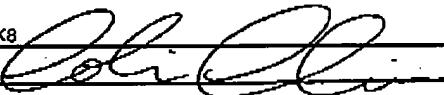
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TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>		Application Number	10/787,097
		Filing Date	February 27, 2004
		First Named Inventor	XIN, JIN
		Art Unit	2631
		Examiner Name	
Total Number of Pages in This Submission	8	Attorney Docket Number	93422-8

ENCLOSURES (Check all that apply)		
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Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Colin C. Clime (Reg. 56,036) Smart & Biggar 438 University Ave, Toronto, ON M5G 2K8
Signature	
Date	December 23, 2005

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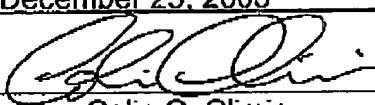
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/787,097
First Named Inventor : Xin Jin
TC/A.U. :
Examiner :
Filed : February 27, 2004
Docket No. : 93422-8
Customer No. : 22463

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DECLARATION IN RESPONSE TO DENIAL OF PETITION TO MAKE SPECIAL
UNDER 37 C.F.R. 1.102

Dear Sir:

I hereby declare that:

the claims of the above-referenced US patent application are directed to a single invention;

a pre-examination search has been made of a corresponding application in the European Patent Office;

the claims of the corresponding application are of the same scope as the apparatus claims (claims 1-14) in the above-referenced US patent application;

the pre-examination search resulted in a search report, which cites four references and is submitted herewith along with a copy of each of the references; and

a detailed discussion of the references, pointing out with the particularity required by 37 C.F.R. §1.111 (b) and (c), how the claimed subject matter is patentable over the references, follows.

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In US patent no. 6,178,313 to Mages, et al. (hereinafter "Mages"), gain of a power amplifier in a mobile station is controlled by controlling a bias current for the power amplifier. Gain control signals, specifying a required gain, are received from a base station and used to determine a first adjustment value (a bias current) that is expected to result in the required gain.

In International Publication no. WO 02/060088, a power control loop is employed to adjust gain of a power amplifier. The gain of the power amplifier is controlled based on a first adjustment value. The first adjustment value is based on a difference between a signal representative of an instantaneous level of power in the output of the power amplifier and a signal representative of an instantaneous level of power in a reference signal.

In US patent no. 6,535,066 to Petsko (hereinafter "Petsko"), a peak detector measures the peak of a symbol to be transmitted. A selection means generates a first adjustment value (a control signal) that is to be used to control the bias provided to a power amplifier.

In International Publication no. WO 02/33844, a power controller for a radio circuit takes into account statistical variation of output power in a signal having a non-constant envelope. In particular, a mean power in the signal to be transmitted is compared to a reference power and the difference is added to a requested power level to generate a sum. The sum, thus generated, is used as a reference value from which is subtracted a value proportional to the power in a signal output from the radio circuit. The difference is used to form a first adjustment value (a control signal).

Claim 1 of the present application describes an efficiency optimizing apparatus for optimizing power efficiency in a transmitter. The apparatus includes a signal converter operable to produce a first adjustment signal. The apparatus also includes a processor operable to produce a second adjustment signal and produce a correction value based on a difference between the first adjustment signal and the second adjustment signal. Additionally, the apparatus includes a summer operable to produce a parameter signal, based on the correction value and the first adjustment signal. The parameter signal may be used to control an aspect of operation of the transmitter.

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While Mages appears to disclose producing a first adjustment signal (the bias current), Mages does not disclose or suggest producing a second adjustment signal or producing a correction value based on a difference between the first adjustment value and the second adjustment signal. Consequently, Mages does not disclose or suggest producing a parameter signal based on the correction value and the first adjustment signal.

Similarly, while International Publication no. WO 02/060088 appears to disclose a first adjustment value (on connection 172), there is no disclosure or suggestion of producing a second adjustment signal based on the same desired average transmitted power on which the first adjustment value is based. Furthermore, International Publication no. WO 02/060088 does not disclose or suggest producing a correction value based on a difference between the first adjustment value and the second adjustment signal. Consequently, International Publication no. WO 02/060088 does not disclose or suggest producing a parameter signal based on the correction value and the first adjustment signal.

Notably, the control signal disclosed in Petsko may be considered a first adjustment value. However, Petsko does not disclose or suggest producing another control signal that may be considered a second adjustment signal or producing a correction value based on a difference between the first adjustment value and a second adjustment signal. Consequently, Petsko does not disclose or suggest producing a parameter signal based on the correction value and the first adjustment signal.

International Publication no. WO 02/33844 discloses a reference signal (x) that may be considered a first adjustment signal and a proportional signal (y) that may be considered a second adjustment signal. Notably, the proportional signal is not based, at least in part, on the indication of desired average transmitted power, as required by claim 1. While the control signal (u) may be considered similar to the claimed parameter signal in that the control signal controls an aspect of operation of the radio circuits (3), the International Publication no. WO 02/33844 does not disclose or suggest producing the control signal (u) based on a correction value and the first adjustment signal, where the correction value is produced based on a difference between the first adjustment signal and a second adjustment signal. Instead, the control signal (u) appears

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only to be based on a difference between the reference signal (x) and the proportional signal (y).

Claim 2 depends from claim 1 and specifies that the aspect of operation of the transmitter that is to be controlled by the parameter signal is an aspect of operation of a power amplifier of the transmitter. The cited documents all discuss the control of an aspect of operation of an amplifier with a signal. However, in none of the cited documents is the signal produced in the manner in which the production of the parameter signal is claimed.

Claim 3 depends from claim 1 and specifies that the apparatus includes a gain controller operable to produce a gain control signal. It appears that each cited document discloses an element that may be considered to produce a gain control signal.

Claim 4 depends from claim 3 and specifies that the signal converter, which produces the first adjustment signal, is a scaling unit operable to scale the gain control signal to produce the first adjustment signal. Among the cited documents, only International Publication no. WO 02/060088 appears to disclose amplifying a gain control signal.

Claim 5 depends from claim 3 and specifies that the signal converter, which produces the first adjustment signal, is a piecewise clipper arranged to process the gain control signal according to a transfer function. None of the cited documents appear to disclose processing the gain control signal according to a transfer function.

Claim 6 depends from claim 1 and specifies that the processor employs, among other procedures, a mapping procedure to produce the second adjustment signal by determining an ideal adjustment signal corresponding, in a mapping table, to the indication of desired average transmitted power. As has been discussed hereinbefore, three of the cited documents do not appear to disclose producing a second adjustment signal. International Publication no. WO 02/33844 discloses a proportional signal (y) that may be considered a second adjustment signal, yet, the proportional signal (y) is not based, at least in part, on the indication of desired average transmitted power, as required for the second adjustment signal by claim 1. As such, the claimed mapping procedure does not appear to be disclosed in the cited documents.

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Claim 7 depends from claim 6 and specifies that the apparatus employs a clipping procedure to limit the difference between the first adjustment signal and the second adjustment signal. Since none of the cited documents appear to disclose a second adjustment signal, produced as claimed, then none of the cited documents appear to disclose obtaining a difference between the first adjustment signal and the second adjustment signal. As such, there is no disclosure of limiting the difference.

Claim 8 depends from claim 6 and specified that provides an additional element in a digital to analog converter, having an output range, for converting the correction value to a correction signal. As has been discussed above, the International Publication no. WO 02/33844 does not disclose or suggest producing the control signal based on a correction value and the first adjustment signal. As such, the International Publication no. WO 02/33844 does not disclose or suggest a digital to analog converter for converting the correction value to a correction signal.

Claims 9 and 10 depend from claim 8. Claims 11 and 12 depend from claim 10. All four claims 9, 10, 11 and 12 are related to the determination of an initial value for use in an accumulation procedure claimed as an element of claim 6, the result of which accumulation procedure is the correction value that is used, in part, as a basis for the control signal. As has been discussed above, the International Publication no. WO 02/33844 does not disclose or suggest producing the control signal based on a correction value and the first adjustment signal. As such, the International Publication no. WO 02/33844 does not disclose or suggest the determination of an initial value for use in an accumulation procedure.

Claim 13 depends from claim 1 and, in part, adds a further element in the form of a summer involved in the production of the second adjustment signal. As discussed above, none of the cited documents appear to disclose a second adjustment signal, produced as claimed. As such, none of the cited documents appear to disclose a summer for this purpose.

Claim 14 depends from claim 1 and since, as discussed above, claim 1 is patentable over the cited art, it is submitted that claim 14 is also patentable over the cited art.

Claim 15 relates to a method of optimizing power efficiency in a transmitter. The

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method includes producing a first adjustment signal. The method also includes producing a second adjustment signal and producing a correction value based on a difference between the first adjustment signal and the second adjustment signal. Additionally, the method includes producing a parameter signal, based on the correction value and the first adjustment signal. The parameter signal may be used to control an aspect of operation of the transmitter.

As discussed above in view of claim 1, Mages does not disclose or suggest producing a parameter signal based on the correction value and the first adjustment signal. Similarly, as discussed above, neither International Publication no. WO 02/060088 nor Petsko disclose or suggest producing a parameter signal based on the correction value and the first adjustment signal. Finally, International Publication no. WO 02/33844 does not disclose or suggest producing the control signal based on a correction value and the first adjustment signal, where the correction value is produced based on a difference between the first adjustment signal and a second adjustment signal.

Claim 16 depends from claim 15 and since, as discussed above, claim 15 is patentable over the cited art, it is submitted that claim 16 is also patentable over the cited art.

Claim 17 depends from claim 15 and includes an additional limitation in that the producing the first adjustment signal is based on a gain control signal. It appears that each cited document discloses an element that may be considered to produce a gain control signal.

Claim 18 depends from claim 15 and includes an additional limitation in that the second adjustment value is produced by determining an ideal adjustment value corresponding, in a mapping table, to an indication of desired average transmitted power. As has been discussed hereinbefore, three of the cited documents do not appear to disclose producing a second adjustment signal. International Publication no. WO 02/33844 discloses a proportional signal (y) that may be considered a second adjustment signal, yet, the proportional signal (y) is not produced by determining an ideal adjustment value corresponding, in a mapping table, to an indication of desired average transmitted power. As such, the claimed mapping procedure does

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not appear to be disclosed in the cited documents.

Claim 19 depends from claim 15 and includes an additional limitation in that producing the second adjustment value involves producing an indication of desired peak transmitted power and basing the second adjustment value on the indication of desired peak transmitted power. As has been discussed hereinbefore, three of the cited documents do not appear to disclose producing a second adjustment signal. International Publication no. WO 02/33844 discloses a proportional signal (y) that may be considered a second adjustment signal, yet, the proportional signal (y) is not produced based on an indication of desired peak transmitted power.

Claim 20 depends from claim 15 and includes an additional limitation in that the

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